

III.A.4.N.c. Temporarily flooded microphyllous shrubland

III.A.4.N.c.1. TAMARIX SPP. SEMI-NATURAL TEMPORARILY FLOODED SHRUBLAND ALLIANCE

Salt-cedar species Semi-natural Temporarily Flooded Shrubland Alliance

TAMARIX SPP. TEMPORARILY FLOODED SHRUBLAND

Salt-cedar species Temporarily Flooded Shrubland

ELEMENT CONCEPT

GLOBAL SUMMARY: This broadly defined association is composed of shrublands which form moderately dense to dense thickets on banks of larger streams across the western Great Plains, interior and southwestern U.S. and northern Mexico. Stands are dominated by introduced species of *Tamarix*, including *Tamarix ramosissima*, *Tamarix chinensis*, *Tamarix gallica*, and *Tamarix parviflora*. *Tamarix* spp. were introduced from the Mediterranean and have become naturalized in various sites, including salt flats and other saline habitats, springs, and especially along streams and regulated rivers, where it replaces the native vegetation, such as shrublands dominated by species of *Salix* or *Prosopis*. A remnant herbaceous layer may be present, depending on the age and density of the shrub layer. *Tamarix* species have become a critical nuisance along most large rivers in the semi-arid West and, because of the difficulty to remove, may have irreversibly changed the vegetation on many sites.

ENVIRONMENTAL DESCRIPTION

USFWS Wetland System: Palustrine

Zion National Park Environment: This association was not sampled at Zion NP, but occurred in the environs and was mapped.

Global Environment: These widespread shrublands are common along larger streams, rivers, and around playas in the western U.S. and Mexico. Elevation ranges from 75 m below sea level to 1860 m. *Tamarix* spp. have become naturalized in various sites including riverbanks, floodplains, basins, sandbars, side channels, springs, salt flats, and other saline habitats. Stands grow especially well along regulated rivers where flood-regenerated native species like *Populus* are declining. Substrates are commonly thin sandy loam soil over alluvial deposits of sand, gravel or cobbles.

VEGETATION DESCRIPTION

Zion National Park Vegetation: This association was not sampled at Zion NP, but occurred in the environs and was mapped.

Global Vegetation: This semi-natural shrubland occurs along streams, rivers and playas where it forms a moderate to dense tall-shrub layer that is solely or strongly dominated by species of *Tamarix* including *Tamarix ramosissima*, *Tamarix chinensis*, *Tamarix gallica*, and *Tamarix parviflora*. Other shrubs may include species of *Salix* (especially *Salix exigua*) and *Prosopis*, *Rhus trilobata*, and *Sarcobatus vermiculatus* but with low cover (if shrub species are codominant then stand is classified as a natural shrubland). Scattered *Acer negundo*, *Salix amygdaloides*, *Populus* spp., or *Elaeagnus angustifolia* trees may also be present. Depending on stand age and density of the shrub layer, an herbaceous layer may be present. Associated species include *Distichlis spicata*, *Sporobolus airoides*, and introduced forage species such as *Agrostis gigantea*, *Agrostis stolonifera*, and *Poa pratensis*. Introduced herbaceous species such as *Polypogon monspeliensis*, *Conyza canadensis*, *Lepidium latifolium*, and others have been reported from shrublands in this association.

Global Dynamics: *Tamarix* spp. are highly competitive shrubs that have invaded many riparian and wetland environments in the western U.S. Hansen et al. (1995) report that these shrubs are extremely drought- and salt-tolerant, produce prolific wind-dispersed seeds over much of the growing season, can resprout after burning or cutting, and if kept moist, buried or broken branches will develop adventitious roots and grow. Stands seem to favor disturbed and flow-regulated rivers, but establish well in pristine areas, too. Under optimum conditions riparian areas can be converted to a dense thicket in less than 10 years (Hansen et al. 1995). Once established, stands are extremely difficult to eradicate, requiring cutting with herbicide application on stumps to prevent resprouting (Smith 1989).

MOST ABUNDANT SPECIES

Zion National Park

Stratum

TALL SHRUB
GRAMINOID

Species

Tamarix ramosissima, *Tamarix chinensis*, *Tamarix gallica*, and *Tamarix parviflora*
Bromus rigidus, *Poa fendleriana*, *Poa pratensis*

Global

Stratum

TALL SHRUB
SHORT SHRUB
GRAMINOID

Species

Tamarix ramosissima, *Tamarix chinensis*, *Tamarix gallica*, and *Tamarix parviflora*
Symphoricarpos oreophilus
Distichlis spicata, *Poa fendleriana*, *Sporobolus airoides*

CHARACTERISTIC SPECIES

Zion National Park

Stratum

TALL SHRUB

Species

Tamarix ramosissima, *Tamarix chinensis*, *Tamarix gallica*, and *Tamarix parviflora*

Global

Stratum

TALL SHRUB

Species

Tamarix ramosissima, *Tamarix chinensis*, *Tamarix gallica*, and *Tamarix parviflora*

OTHER NOTEWORTHY SPECIES

Global

Stratum

GRAMINOID

Species

Bromus tectorum

GLOBAL SIMILAR ASSOCIATIONS:

- *Tamarix* spp. - (*Baccharis halimifolia*) Shrubland (CEGL004918)

GLOBAL STATUS AND CLASSIFICATION COMMENTS

Global Conservation Status Rank: GW.

Global Comments: *Tamarix* spp. Temporarily Flooded Shrubland (CEGL003114) is a broadly defined plant association that is composed of many diverse *Tamarix* spp.-dominated vegetation communities from a wide variety of environments. Muldavin et al. (2000a) described 8 community types that will be reviewed as possible USNVC associations.

ELEMENT DISTRIBUTION

Zion National Park Range: This association was not sampled at Zion NP, but occurred in the environs and was mapped. It likely occurs in lowlands along stream channels and in disturbed riparian forest in canyons.

Global Range: This semi-natural shrubland is found along drainages in the semi-arid western Great Plains, interior and southwestern U.S. and northern Mexico, from central and eastern Montana, south to Colorado, western Oklahoma and Texas, west to California.

Nations: MX US

States/Provinces: AZ CA CO MT MXCH MXCO MXSO NM NV OK TX UT WY?

ELEMENT SOURCES

Zion National Park Inventory Notes: Plots: None

Classification Confidence: 2 **Identifier:** CEGL003114

References: Baalman 1965, Cowardin et al. 1979, Hansen et al. 1995, Hoagland 2000, Holland 1986b, Muldavin et al. 2000a, Nachlinger and Reese 1996, Ortenberger and Bird 1933, Paysen et al. 1980, Sawyer and Keeler-Wolf 1995, Smith 1989, Stevens and Shannon 1917, Szaro 1989, Ungar 1968, Von Loh et al. 2002, Ware and Penfound 1949